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RUEHKA/AMEMBASSY DHAKA 0217
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RUEHNE/AMEMBASSY NEW DELHI 0268
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SUBJECT: UZBEK S&T: BIOTECHNOLOGY AND AGRICULTURE

REF: TASHKENT 1151

¶1. (SBU) SUMMARY. OES/STC Officer Michael C. Schena (ESToff) visited Uzbekistan from June 1 through July 6 to discuss Uzbek Science and Technology (S&T) infrastructure and to continue negotiations on a U.S.-Uzbek S&T Cooperation Agreement (reftel). This cable focuses on biotechnology and agriculture and is one of a series of cables summarizing the current state of Uzbek S&T. END SUMMARY

INSTITUTE OF GENETICS AND EXPERIMENTAL PLANT BIOLOGY (IGPEB)

¶2. (SBU) IGPEB's research is focused in the following areas: enrichment, preservation, introduction, exploration and utilization of cotton germplasm resources and other agricultural crops; investigation of cotton genome structure; enrichment of traditional plant breeding by marker-assisted selection tools utilizing biochemical and molecular markers; cotton tissue culture and creation of transgenic plants of cotton, wheat and other crops; creation of superior quality cultivars of agricultural crops, enrichment, preservation and utilization of phyto-pathogen collection for screening of new varieties, investigation of human genome structure and function, development of human genetic diagnostics tools.

¶3. (SBU) ESToff met with Dr. Ibrokhim Abdurakhmonov, Acting Director for IGEPB. The institute places its main focus on the production of trans-genetic cotton, but it also does research on ecological genetics, wheat, proteins, and human genome studies. The institute has on hand over 170K cotton geno-plasms. The institute has extensive contacts with USDA-ARS, UNDP, Texas A&M, and Mississippi State University. These collaborations were able to be maintained throughout the decertification of Uzbekistan, and an ARS scientist is scheduled to visit the lab in the coming weeks. Abdurakhmonov discussed his major collaborative projects including a fungi used to eradicate narco-poppy, which has been field tested in Uzbekistan, Kyrgyzstan, and Tajikistan with a high level of success. Abdurakhmonov stated this project was funded in part by USDOS, but was stopped because the fungi could potentially be used for another harmful purpose. (COMMENT: No further reference to these claims was given, but this should be investigated further. End Comment.) Abdurakhmonov also showed

his lab's work on cotton genetics, which were producing a finer, higher cotton yield that uses less water and can tolerate higher levels of soil salinity. All foreign contributions to this project have received matching funds from the GOU. Abdurakhmonov is strongly supportive of international collaboration for his center and his students; he mentioned his desire to send some of his student researchers to a biotechnology conference in the U.S. later this year.

INSTITUTE OF MICROBIOLOGY (IMB)

¶4. (SBU) IMB's research is focused in the following areas: study of microbial diversity; ecology, taxonomy, biology, cytology and genetics of bacteria, fungi and yeasts; culture collection and preservation of important microbial strains; study of physiology and biochemistry of microorganisms; environmental protection through application of microorganisms; biotechnology.

¶5. (SBU) ESToff met with Javlon Tashpulatov, Acting Director for the institute. Tashpulatov described the institute's work involving biofuels, biogas, fungi and enzymes. The majority of this institute's work focuses on the "biofuelization" of cotton materials including waste, stock seed and oil as well as strengthening the cotton plant itself. Tashpulatov stated that IMB was conducting a very successful project involving conversion of cotton waste into bio-ethanol through the use of enzymes to create a cellulose-based ethanol. This project is

done in cooperation with Virginia Tech. IMB has current ongoing projects also with USDA, CRDF, USAID, Texas A&M, and Mississippi State University.

INSTITUTE OF BIO-ORGANIC CHEMISTRY (IBC)

¶6. (SBU) IMC's research is focused in the following areas: study and investigation of structure and functional relationships of important biologically active compounds; creation of original medicinal means from local plants and animal raw materials; technology development for re-processing of secondary products.

¶7. (SBU) ESToff met with Abbaskhan Turaev, Director of the Institute. Turaev described his institute as having four main roles: basic research, enhancing cotton, development of pharmaceuticals, and development of new plant products. The institute has developed a number of anti-viral products aimed at HIV/AIDS, Chlamydia, Herpes, and Hepatitis C. A number of these products are exported. Turaev also mentioned a cancer treatment that IBC developed in partnership with Harvard University, but he said more funding is needed to complete the research and conduct clinical trials. This institute also collaborates with NIH, Tulane University, U Texas-El Paso, CRDF and STCU.

¶8. (SBU) Following the meeting, Turaev took ESToff on a tour of a number of the institute's labs showing equipment purchased with international cooperation funds as well as some purchased directly with state budget allocations. One such purchase from the state budget, an x-ray molecular structure scanner of crystals, appeared to be brand new and reportedly cost $400 thousand USD. Turaev elaborated further on the state budget process, stating that the government had allocated $2 million USD to the Academy of Sciences to procure new equipment to conduct international research at the level of international researchers. Turaev said his institute received its share of this allocation by submitting line item requests, each of which was judged on its merits. In this way IBC was able to procure funds to purchase its x-ray molecular structure scanner.

¶9. (SBU) COMMENT: IBC's researchers and director were

strongly supportive of the prospect of further international collaboration. In the meeting with Turaev, twelve lead scientists from other lab divisions sat in to discuss projects they were working on, past projects with international partners, and questions on the role the new S&T Agreement will play in future scientific collaboration. Turaev also keenly understood that a key factor of this agreement is collaboration and cooperation; it is not an aid agreement. Turaev clearly wanted to maintain his labs at the level at which they could adequately collaborate as partners with Western researchers. END COMMENT

INSTITUTE OF THE CHEMISTRY OF PLANT SUBSTANCES (ICPS)

¶10. (SBU) ICPS's research is focused in the following areas: chemical, pharmacological and toxicological research of natural and synthetic substances for the purposes of discovering or synthesizing biologically active compounds, manufacturing drug substances, and developing plant protection means.

¶11. (SBU) ESToff met with Deputy Director Dr. Takhir Dustmukhamedov. According to Dustmukhamedov, ICPS studies plant compounds and substances derived from plants. It also develops agricultural and health related products. The labs are equipped with newer equipment procured through state budget funding as well as cooperative international programs. What was unique about this facility was the inclusion of innovation and a direct lab to market connection. This

facility not only did the research for a number of products, it also has its own "factory in the back," capable of producing mass quantities of product to be sold within Uzbekistan and abroad. The finished products included a number of pharmaceuticals and products related to health and agriculture.

¶12. (SBU) COMMENT: ESToff toured the labs as well as the production line and saw samples of the finished goods. This facility could serve as a model for how to conduct innovative "labs to markets" programs in Uzbekistan. END COMMENT.

INSTITUTE OF ZOOLOGY (IZ)

¶13. (SBU) IZ's research is focused in the following areas: study and development of protective measures and sustainable use of biodiversity; pest control and management; biological basics of parasitism and parasitic diseases of agricultural animals; monitoring and protection of rare, vanishing and resource animals; wildlife cadastre; and environmental security.

¶14. (SBU) ESToff met with IZ Director Djaloliddin Azimov. The institute focuses on biodiversity both terrestrial and aquatic, as well as development of anti-termite technologies and venom related products. The institute has had strong collaboration with USG partners both at present and in the past, including hosting an Embassy Science Fellow (ESF) to study the Turkistan Termite. This research with the ESF led to a follow-on project in which the institute is working on commercializing the "bait" created through this research and is building a production line for this "bait."

¶15. (SBU) COMMENT: Aside from touring the labs and the facilities, ESToff toured the serpentarium full of hissing, angry poisonous snakes. The original purpose of this facility was to extract venom from over 500 snakes. At present the facility has about 50 asps and rattlesnakes for venom research. END COMMENT.

CONCLUSION

¶16. (SBU) The agrarian sector, in particular cotton, is a major part of the Uzbek economy and significant investment has been made in the agricultural sciences as well as biotechnology. As one of the successor states to the USSR, Uzbekistan inherited a number of bio-technological researchers and centers which the Uzbeks hope to capitalize on. When the S&T cooperation agreement is concluded (reftel), it would be highly beneficial for USDA, NSF, EPA as well as any other agencies that have significant interests in agro-biotechnology to consider collaborating with Uzbek scientists working in bio-technology and agriculture.
BUTCHER